Ordering number : ENA0359A

SANYO Semiconductors

DATA SHEET

N-Channel Silicon MOSFET

2SK2625ALS — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Low Qg.
- Ultrahigh-speed switching.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		600	V
Gate-to-Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_{Dc}*1	Limited only by maximum temperature	5	A
	I_{Dpack}*2	SANYO's ideal heat dissipation condition	4.4	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	16	A
Allowable Power Dissipation	P_D		2.0	W
		Tc=25°C (SANYO's ideal heat dissipation condition)	30	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C
Avalanche Energy (Single Pulse) *3	E_{AS}		87	mJ
Avalanche Current *4	I_{AV}		4	A

*1 Shows chip capability

*2 Package limited

*3 V_{DD}=50V, L=10mH, I_{AV}=4A

*4 L≤10mH, single pulse

Marking : K2625

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SANYO Semiconductor Co., Ltd.

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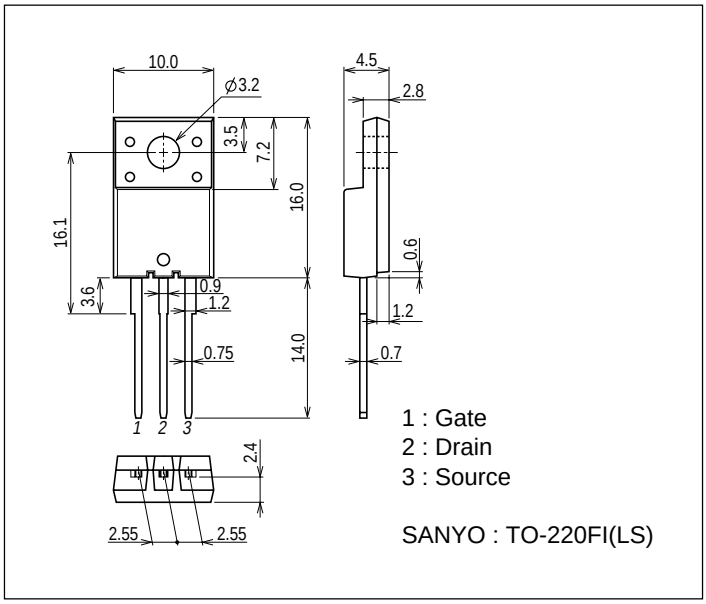
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	600			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V, V_{GS}=0V			1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±30V, V_{DS}=0V			±100	nA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=1mA	3.5		5.5	V
Forward Transfer Admittance	|yfs|	V_{DS}=10V, I_D=2.5A	1.5	3.0		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)	I_D=2.5A, V_{GS}=15V		1.5	2.0	Ω
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		700		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		220		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		110		pF
Total Gate Charge	Qg	V_{DS}=200V, I_D=5A, V_{GS}=10V		20		nC
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		20		ns
Rise Time	t_r	See specified Test Circuit.		20		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		50		ns
Fall Time	t_f	See specified Test Circuit.		25		ns
Diode Forward Voltage	V_{SD}	I_S=5A, V_{GS}=0V		0.88	1.2	V

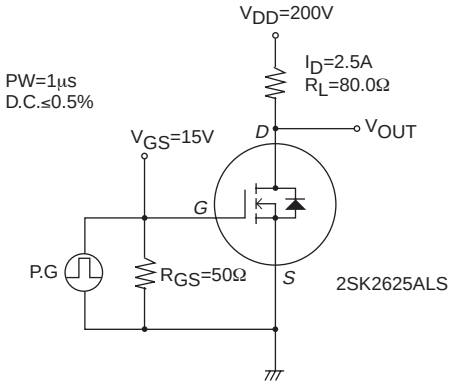
Package Dimensions

unit : mm (typ)

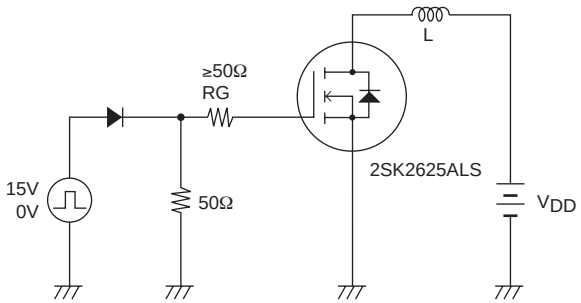
7509-002

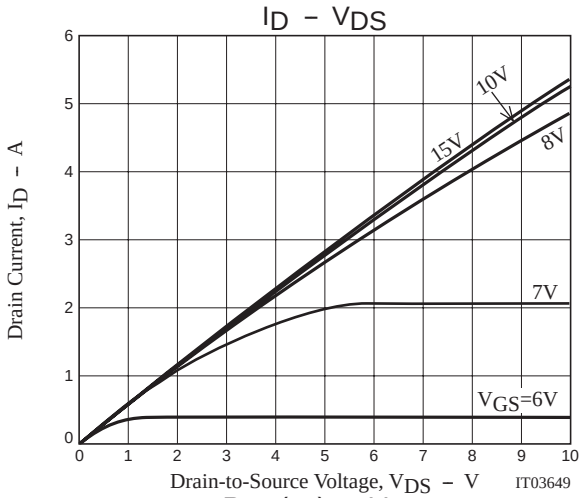


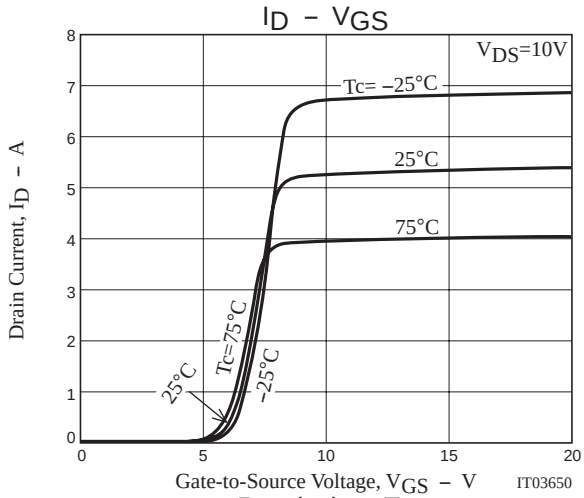
Switching Time Test Circuit

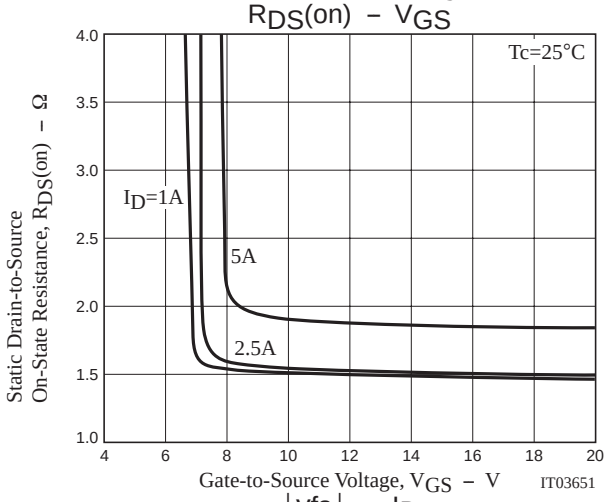


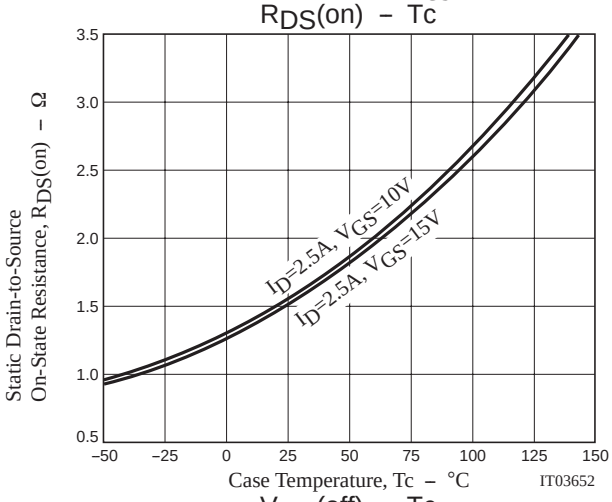
Avalanche Resistance Test Circuit

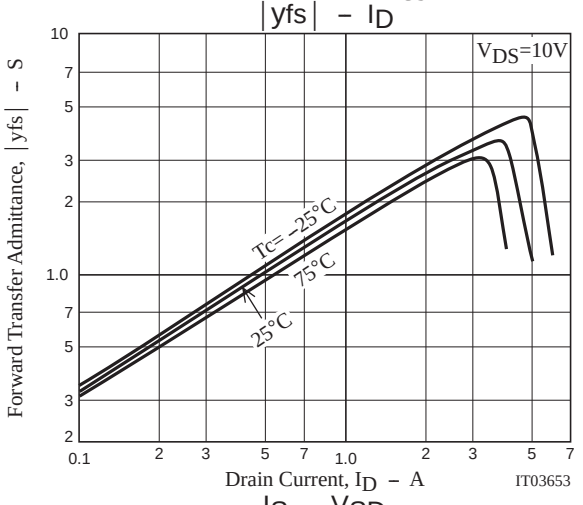


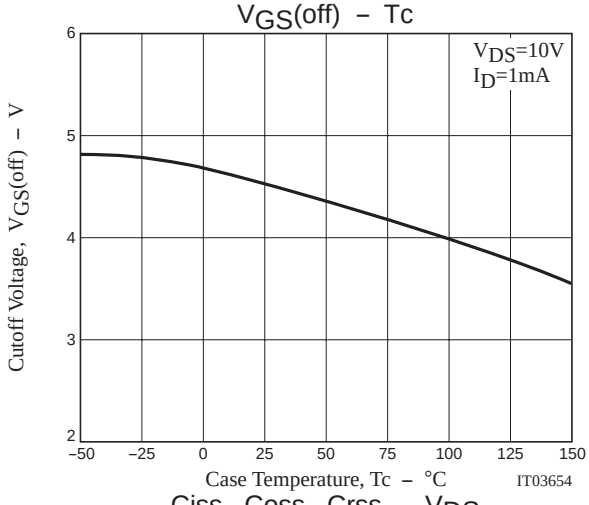

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT03649
10V
15V
8V
7V
VGS=6V

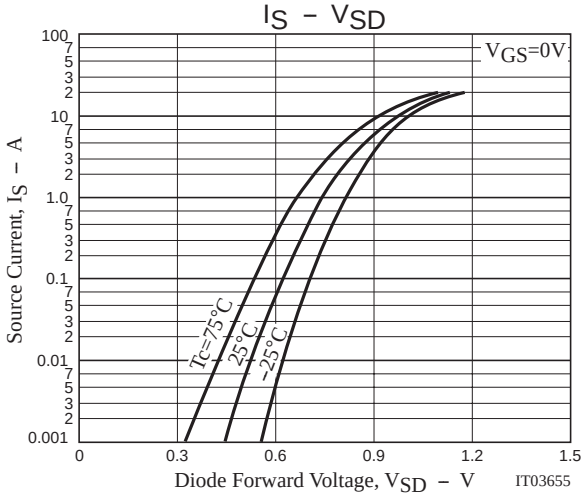

ID – VGS
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT03650
VDS=10V
Tc= –25°C
25°C
75°C
25°C
Tc=75°C
–25°C

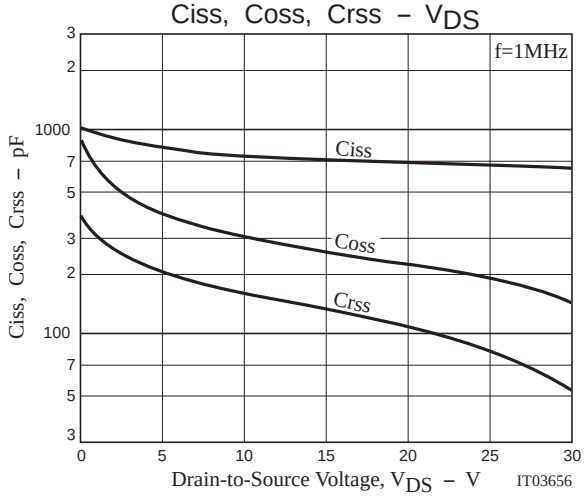

RDS(on) – VGS
Static Drain-to-Source
On-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V
IT03651
Tc=25°C
ID=1A
5A
2.5A


RDS(on) – Tc
Static Drain-to-Source
On-State Resistance, RDS(on) – Ω
Case Temperature, Tc – °C
IT03652
ID=2.5A, VGS=10V
ID=2.5A, VGS=15V

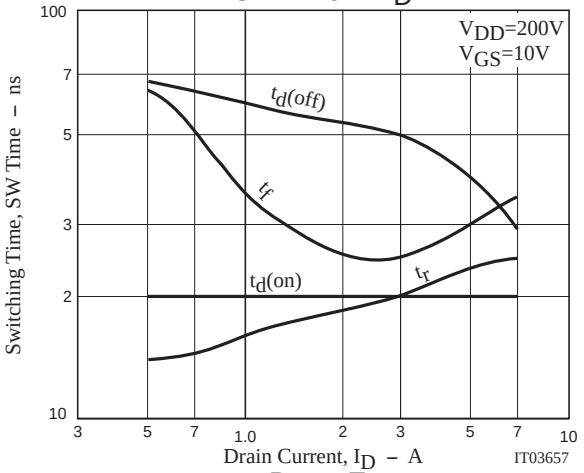

|yfs| – ID
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT03653
VDS=10V
Tc= –25°C
75°C
25°C


VGS(off) – Tc
Cutoff Voltage, VGS(off) – V
Case Temperature, Tc – °C
IT03654
VDS=10V
ID=1mA

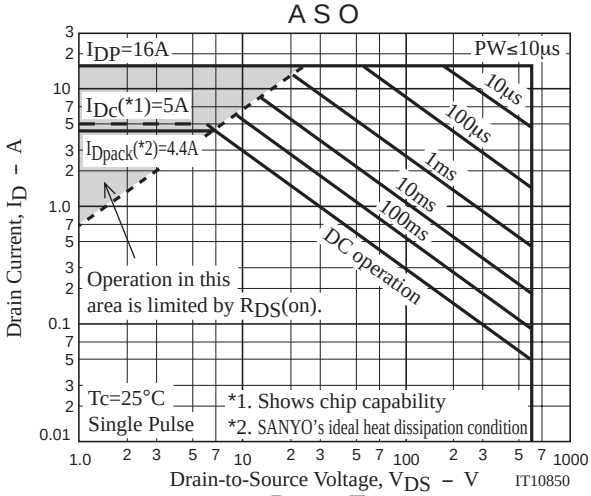

IS – VSD
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT03655
VGS=0V
Tc=75°C
25°C
–25°C


Ciss, Coss, Crss – VDS
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT03656
f=1MHz
Ciss
Coss
Crss

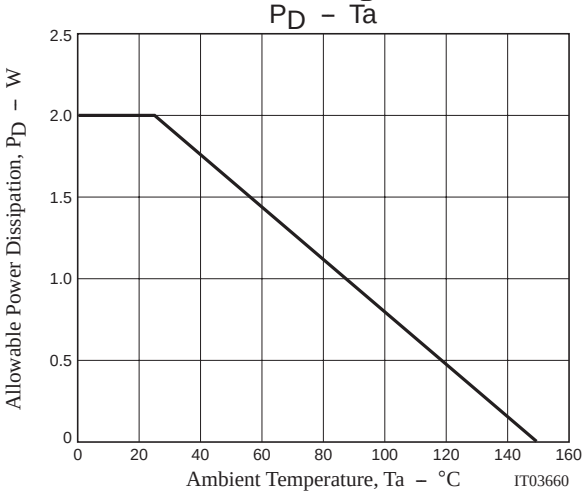
SW Time – I_D



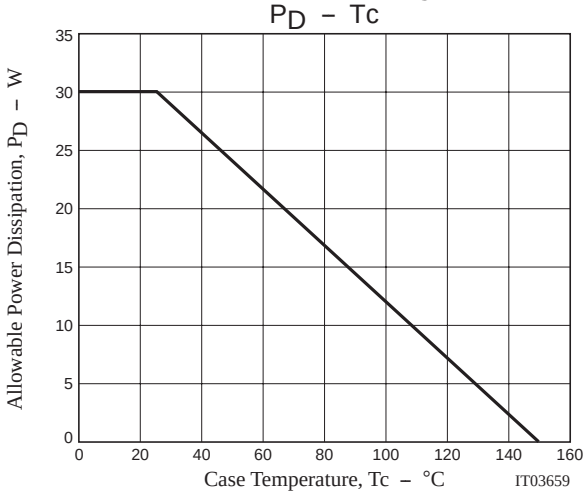
A S O



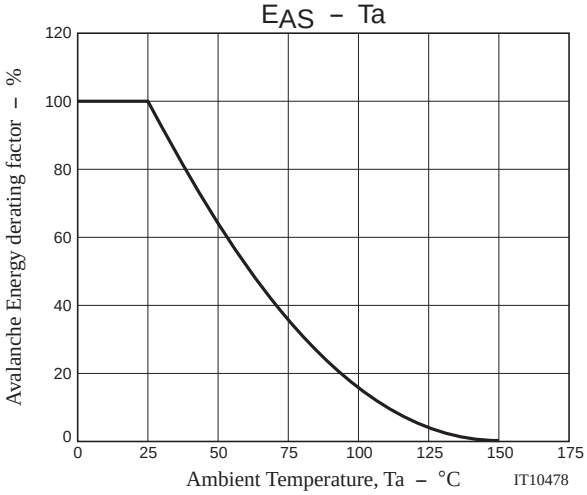
P_D – Ta



P_D – Tc



E_{AS} – Ta



Note on usage : Since the 2SK2625ALS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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